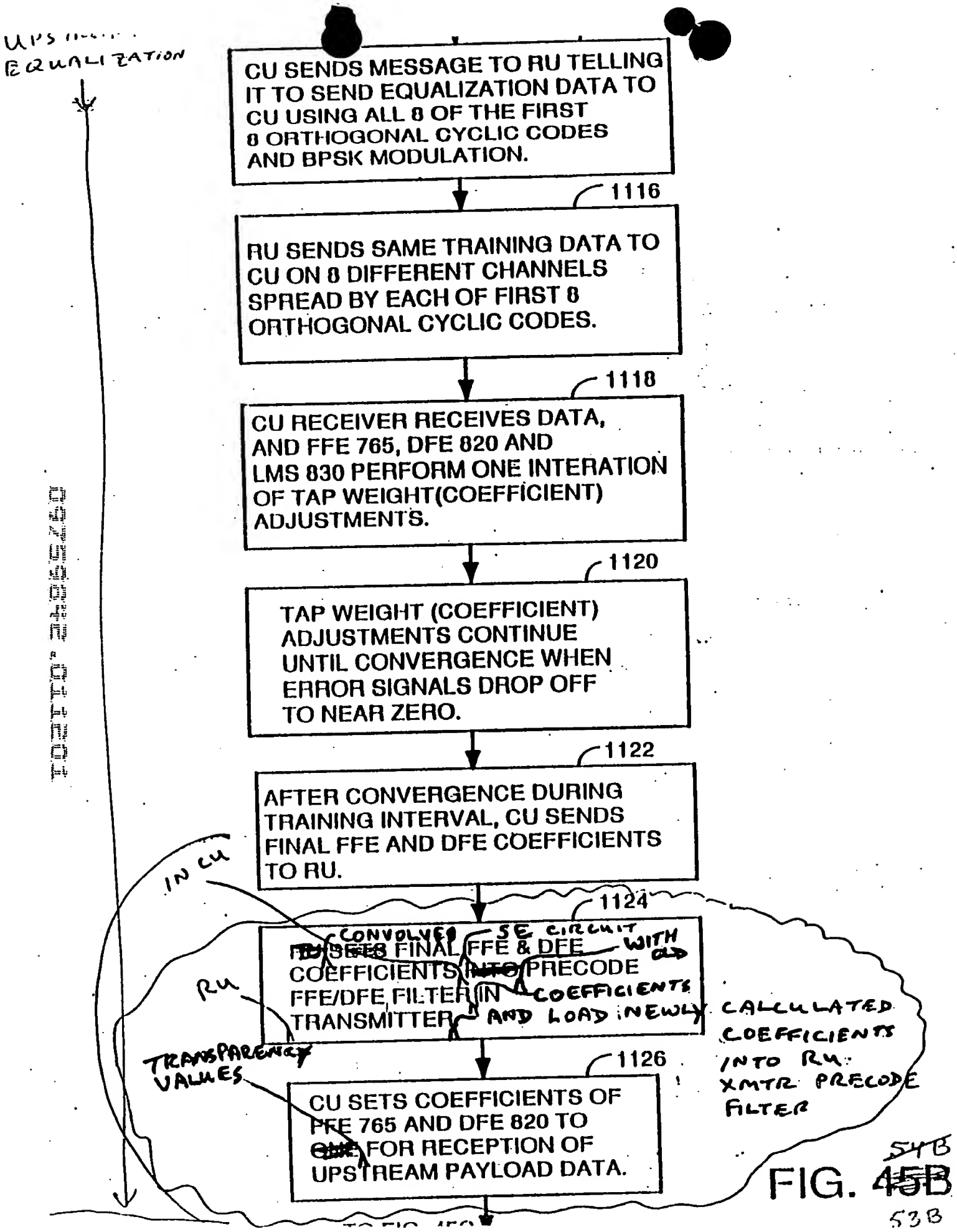
UPSTREAM EQUALIZATION
CU SENDS MESSAGE TO RU TELLING IT TO SEND EQUALIZATION DATA TO CU USING ALL 8 OF THE FIRST 8 ORTHOGONAL CYCLIC CODES AND BPSK MODULATION.
1116
RU SENDS SAME TRAINING DATA TO CU ON 8 DIFFERENT CHANNELS SPREAD BY EACH OF FIRST 8 ORTHOGONAL CYCLIC CODES.
1118
CU RECEIVER RECEIVES DATA, AND FFE 765, DFE 820 AND LMS 830 PERFORM ONE INTERATION OF TAP WEIGHT(COEFFICIENT) ADJUSTMENTS.
1120
TAP WEIGHT (COEFFICIENT) ADJUSTMENTS CONTINUE UNTIL CONVERGENCE WHEN ERROR SIGNALS DROP OFF TO NEAR ZERO.
1122
AFTER CONVERGENCE DURING TRAINING INTERVAL, CU SENDS FINAL FFE AND DFE COEFFICIENTS TO RU.
IN CU
1124
CONVOLVE FINAL FFE & DFE COEFFICIENTS INTO PRECODE FFE/DFE FILTER IN TRANSMITTER
SE CIRCUIT WITH OLD COEFFICIENTS AND LOAD NEWLY CALCULATED COEFFICIENTS INTO RU XMTR PRECODE FILTER
RU
TRANSPARENCY VALUES
1126
CU SETS COEFFICIENTS OF PFE 765 AND DFE 820 TO FOR RECEPTION OF UPSTREAM PAYLOAD DATA.
54B
53B

FIG. 45B

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FROM FIG. 45B

DOWNSTREAM EQUALIZATION

1128

CU SENDS EQUALIZATION TRAINING DATA TO RU SIMULTANEOUSLY ON 8 CHANNELS SPREAD ON EACH CHANNEL BY ONE OF THE FIRST 8 ORTHOGONAL CYCLIC CODES MODULATED BY BPSK.

1130

RU RECEIVER RECEIVES EQUALIZATION TRAINING DATA IN MULTIPLE ITERATIONS AND USES LMS 830, FFE 765, DFE 820 AND DIFFERENCE CALCULATION CIRCUIT 832 TO CONVERGE ON PROPER FFE AND DFE TAP WEIGHT COEFFICIENTS.

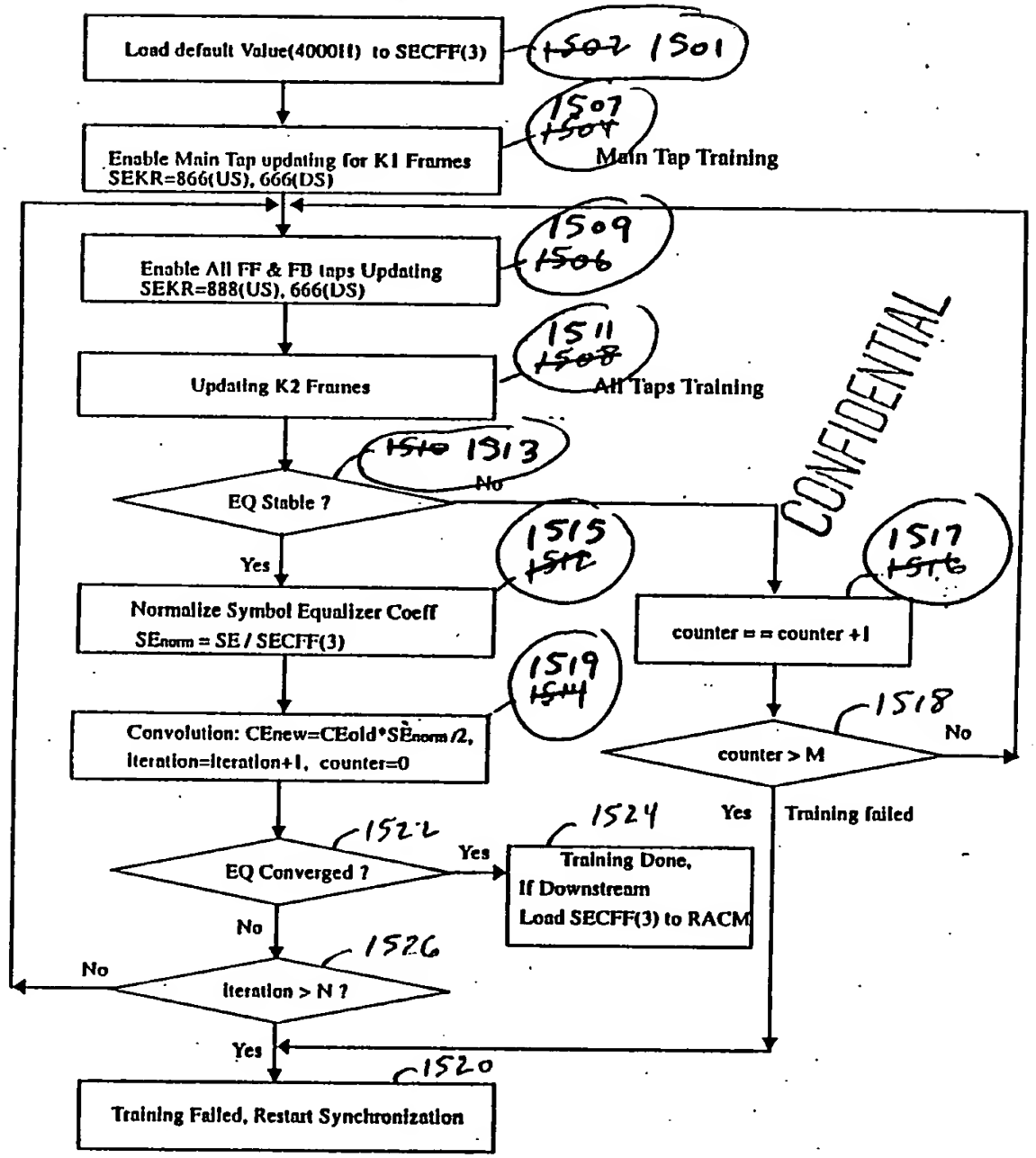
1132

AFTER CONVERGENCE, CPU READS FINAL TAP WEIGHT COEFFICIENTS FOR FFE 765 AND DFE 820 AND ~~LOADS THESE TAP WEIGHT COEFFICIENTS INTO FFE/DFE CIRCUIT 764~~; CPU SETS FFE 765 AND DFE 820 COEFFICIENTS TO INITIALIZATION VALUES.

CONVOLVES THESE SE FILTER TAP WEIGHTS WITH THE OLD FILTER TAP WEIGHTS OF THE FFE AND DFE FILTERS OF CE CIRCUIT 764 AND LOADS THE NEWLY CALCULATED TAP WEIGHTS INTO THE FFE AND DFE FILTERS OF THE CE CIRCUIT

FIG. ~~45C~~ 54C 53C

Initial 2-Step Training Algorithm



2-STEP INITIAL EQUALIZATION TRAINING

FIG. 60